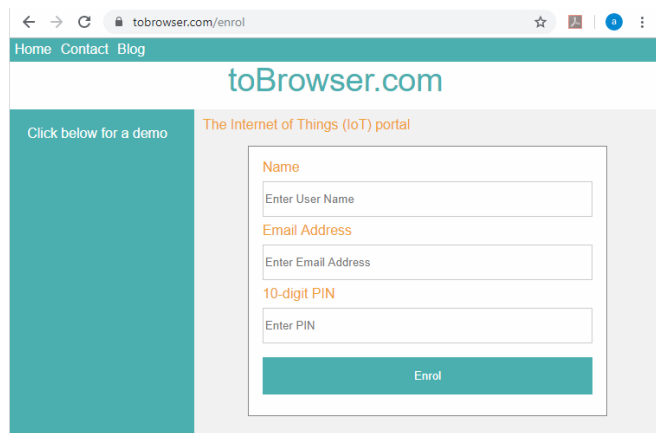
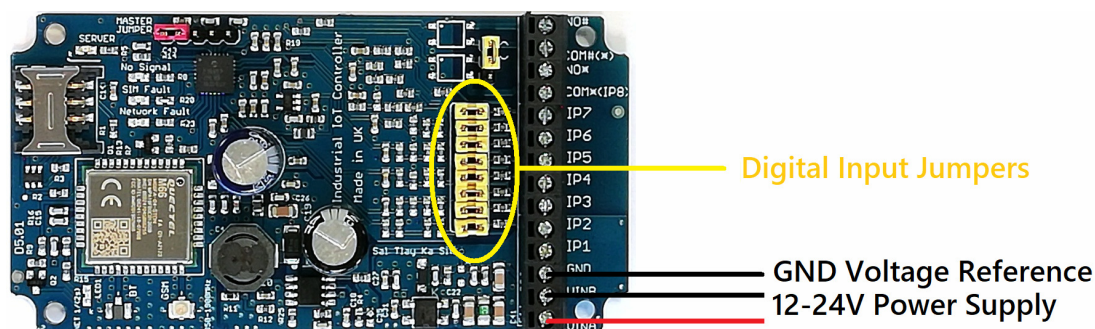


D5 IoT Data Logger

The D5 Data Logger comes complete with a SIM card which can use almost all mobile networks throughout Europe. To start data logging simply connect the VINA/VINB terminals to a suitable power source (12-24V AC or DC).

0-10V voltages can be measured on all 8 channels (13V max). The 0V reference connection should be made to GND.

For applications that require monitoring a switch/relay status the 'Digit Input Jumper' for that channel should be in place. This allows for a small pull-up current on each input. The switch/relay should be connected between the IPx terminal and the GND terminal.



To gain access to the unit via the internet, the administrator should visit:

tobr.uk/enrol

This address should be typed into a web browser on a phone or PC. The details of the owner or system administrator should be entered into the website. The unique 10-digit PIN will be supplied with a new unit. Alternatively this is the last 10-digit of the IMEI number engraved into the metal can on the Quectel module.

Clicking enrol will redirect the user to the 'Live Screen'. The 'users' page link is available at the top of the 'Live Screen'. Further users should be added on this page.

Input Setup

Each input can be named, can have unique display units and can be linearly scaled from the voltage reading. This is done by navigating to the "Web Setup" page.

To calculate the scale factor and offset, two data points are required. Two voltage readings from the input should be made via the Live Screen with known reading values. For example, for a temperature sensor, two readings would be made:

Reading 1: 10C – 2.5Volts

Reading 2: 25C – 4.0Volts

The scale factor is calculated as follows:

$$\text{Scale} = \frac{([\text{Measurement 1}] - [\text{Measurement 2}])}{([\text{Voltage 1}] - [\text{Voltage 2}])}$$

$$= \frac{(25 - 10)}{(4.0 - 2.5)} = 15/1.5 = 10$$

| | |
|-------------|----------------|
| Temperature | Input 1 Name |
| C | Input 1 Units |
| 10 | Input 1 Scale |
| -15 | Input 1 Offset |

The offset factor is calculated as follows: Offset = [Measurement 1] – (Scale x [Voltage 1]) = 25 – (10 x 4.0) = -15

Add User

| | | |
|---------------|---|-------------------------------|
| User | <input type="text" value="User"/> | |
| Email | <input type="text" value="d5user@tobrowser.com"/> | |
| Permission | Full Access | |
| Start Date | <input type="text" value="dd/mm/yyyy"/> | <input type="checkbox"/> None |
| End Date | <input type="text" value="dd/mm/yyyy"/> | <input type="checkbox"/> None |
| Notifications | None | |
| Job | None | |
| Address | <input type="text"/> | |
| Phone | <input type="text"/> | |
| Save | | Cancel |

Alert Setup

Each input can be configured to send email and SMS messages when the input exceeds a high or low voltage or measurement limit. When the input exceeds these limits the dial on the Live Screen changes colour to red.

To change the limit, the administrator should navigate to the 'Voltages' page. Here the upper and lower limits can be set either in terms of voltage or the scaled value.

To enable email alerts, the administrator should visit the 'Users' page and either add a new user or amend an existing user. To enable alerts from all inputs the 'Full' should be selected from the 'Notifications' drop down box. Alternatively, the individual event should be typed into the text box directly. For example, to get notifications when Input 1 and Input 2 drop below the low voltage threshold, the following should be entered:

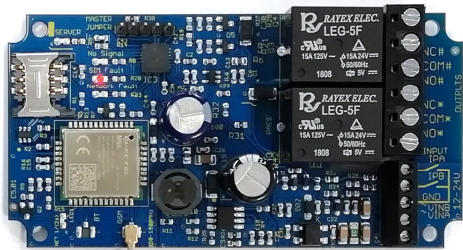
40,42

To enable SMS messaging, the 'Phone Numbers' page should be visited. On this page both Call and Text number can be entered. These numbers will be dialed and will receive messages when the enabled event occurs.

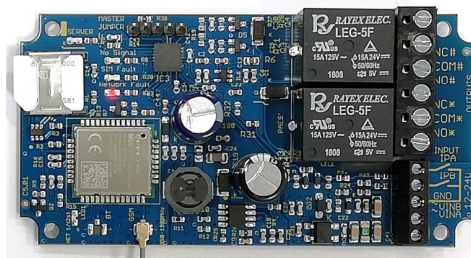
To enable texting and dialling on these events, the 'Inputs' page should be visited. Texting and dialling can be selected for each available event.

Fault Finding

When first powered up, the flashing network LED will initially flash at a rate of once per second. This will slow to once every 2 seconds once a network connection has been established. If the device cannot acquire a connection a fault light will illuminate to indicate the cause of the problem.

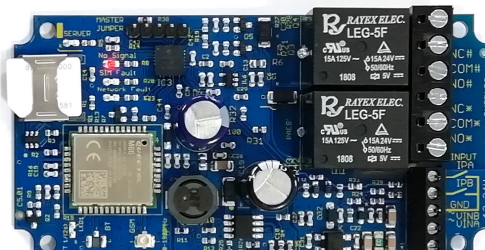


The SIM Fault LED lights if the device cannot use the SIM. Check the orientation of the SIM and remove all PIN numbers or set them to 0000.



The Network Fault LED lights when there is a problem with the network service. This is normally due to the SIM not having sufficient credit.

| Event Setup | | | | |
|--|--|----------|--------------|--|
| OK | | | | |
| Save | | | | |
| <input checked="" type="checkbox"/> Text | <input checked="" type="checkbox"/> Call | Event 40 | Input 1 Low | Solar Level Alert (The level has dropped below the threshold -link |
| <input checked="" type="checkbox"/> Text | <input checked="" type="checkbox"/> Call | Event 41 | Input 1 High | Solar Level Alert (The level has increased above the threshold -link |
| <input checked="" type="checkbox"/> Text | <input checked="" type="checkbox"/> Call | Event 42 | Input 2 Low | Voltage Alert (The voltage has dropped below the threshold -link |
| <input checked="" type="checkbox"/> Text | <input checked="" type="checkbox"/> Call | Event 43 | Input 2 High | Voltage Alert (The voltage has increased above the threshold -link |
| <input type="checkbox"/> Text | <input type="checkbox"/> Call | Event 44 | Input 3 Low | 44 |
| <input type="checkbox"/> Text | <input type="checkbox"/> Call | Event 45 | Input 3 High | 45 |
| <input type="checkbox"/> Text | <input type="checkbox"/> Call | Event 46 | Input 4 Low | 46 |
| <input type="checkbox"/> Text | <input type="checkbox"/> Call | Event 47 | Input 4 High | 47 |
| <input type="checkbox"/> Text | <input type="checkbox"/> Call | Event 48 | Input 5 Low | 48 |
| <input type="checkbox"/> Text | <input type="checkbox"/> Call | Event 49 | Input 5 High | 49 |
| <input type="checkbox"/> Text | <input type="checkbox"/> Call | Event 4A | Input 6 Low | 4A |
| <input type="checkbox"/> Text | <input type="checkbox"/> Call | Event 4B | Input 6 High | 4B |
| <input type="checkbox"/> Text | <input type="checkbox"/> Call | Event 4C | Input 7 Low | 4C |



The No Signal LED lights when no GSM signal can be found. Check the aerial is fitted correctly. The LED will flash when the signal strength is less than 11. Keep the aerial away from wires and metallic surfaces.



The split washer should not be used on thick plastic enclosures (use it only on thin metal enclosures). Ensure the aerial cable is fully screwed together – the threaded end piece will become loose during shipping!